AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

(b) Determinations of the effective dose equivalent shall be made using the weighting factor values provided in §835.2.

[58 FR 65485, Dec. 14, 1993, as amended at 63 FR 59682, Nov. 4, 1998]

§835.204 Planned special exposures.

(a) A planned special exposure may be authorized for a radiological worker to receive doses in addition to and accounted for separately from the doses received under the limits specified in §835.202(a), provided that each of the following conditions is satisfied:

(1) The planned special exposure is considered only in an exceptional situation when alternatives that might prevent a radiological worker from exceeding the limits in §835.202(a) are unavailable or impractical;

(2) The contractor management (and employer, if the employer is not the contractor) specifically requests the planned special exposure, in writing; and

(3) Joint written approval is received from the appropriate DOE Headquarters program office and the Secretarial Officer responsible for environment, safety and health matters.

(b) Prior to requesting an individual to participate in an authorized planned special exposure, the individual's dose from all previous planned special exposures and all doses in excess of the occupational dose limits shall be determined.

(c) An individual shall not receive a planned special exposure that, in addition to the doses determined in §835.204(b), would result in a dose exceeding the following:

(1) In a year, the numerical values of the dose limits established at §835.202(a); and

(2) Over the individual's lifetime, five times the numerical values of the dose limits established at §835.202(a).

(d) Prior to a planned special exposure, written consent shall be obtained from each individual involved. Each such written consent shall include:

(1) The purpose of the planned operations and procedures to be used;

(2) The estimated doses and associated potential risks and specific radiological conditions and other hazards which might be involved in performing the task; and

(3) Instructions on the measures to be taken to keep the dose ALARA considering other risks that may be present.

(e) Records of the conduct of a planned special exposure shall be maintained and a written report submitted within 30 days after the planned special exposure to the approving organizations identified in §835.204(a)(3).

(f) The dose from planned special exposures is not to be considered in controlling future occupational dose of the individual under §835.202(a), but is to be included in records and reports required under this part.

[58 FR 65485, Dec. 14, 1993, as amended at 63 FR 59682, Nov. 4, 1998]

§835.205 Determination of compliance for non-uniform exposure of the skin.

(a) Non-uniform exposures of the skin from X-rays, beta radiation, and/or radioactive material on the skin are to be assessed as specified in this section.

(b) For purposes of demonstrating compliance with §835.202(a)(4), assessments shall be conducted as follows:

(1) *Area of skin irradiated is 100 cm^2 or more.* The non-uniform dose equivalent received during the year shall be averaged over the 100 cm^2 of the skin receiving the maximum dose, added to any uniform dose equivalent also received by the skin, and recorded as the shallow dose equivalent to any extremity or skin for the year.

(2) *Area of skin irradiated is 10 cm^2 or more, but is less than 100 cm^2.* The non-uniform dose equivalent (H) to the irradiated area received during the year shall be added to any uniform dose equivalent also received by the skin and recorded as the shallow dose equivalent to any extremity or skin for the year. H is the dose equivalent averaged over the 1 cm^2 of skin receiving the maximum absorbed dose, D, reduced by the fraction f, which is the irradiated area in cm^2 divided by 100 cm^2 (i.e., H=fD). In no case shall a value of f less than 0.1 be used.

(3) *Area of skin irradiated is less than 10 cm^2.* The non-uniform dose equivalent shall be averaged over the 1 cm^2 of

skin receiving the maximum dose. This dose equivalent shall:

(i) Be recorded in the individual's occupational exposure history as a special entry; and

(ii) Not be added to any other shallow dose equivalent to any extremity or skin recorded as the dose equivalent for the year.

§ 835.206 Limits for the embryo/fetus.

(a) The dose equivalent limit for the embryo/fetus from the period of conception to birth, as a result of occupational exposure of a declared pregnant worker, is 0.5 rem (0.005 sievert).

(b) Substantial variation above a uniform exposure rate that would satisfy the limits provided in §835.206(a) shall be avoided.

(c) If the dose equivalent to the embryo/fetus is determined to have already exceeded 0.5 rem (0.005 sievert) by the time a worker declares her pregnancy, the declared pregnant worker shall not be assigned to tasks where additional occupational exposure is likely during the remaining gestation period.

§ 835.207 Occupational dose limits for minors.

The dose equivalent limits for minors occupationally exposed to radiation and/or radioactive materials at a DOE activity are 0.1 rem (0.001 sievert) total effective dose equivalent in a year and 10% of the occupational dose limits specified at §835.202(a)(3) and (a)(4).

[63 FR 59682, Nov. 4, 1998]

§ 835.208 Limits for members of the public entering a controlled area.

The total effective dose equivalent limit for members of the public exposed to radiation and/or radioactive material during access to a controlled area is 0.1 rem (0.001 sievert) in a year.

[63 FR 59682, Nov. 4, 1998]

§ 835.209 Concentrations of radioactive material in air.

(a) The derived air concentration (DAC) values given in appendices A and C of this part shall be used in the control of occupational exposures to airborne radioactive material.

(b) The estimation of internal dose shall be based on bioassay data rather than air concentration values unless bioassay data are:

(1) Unavailable;

(2) Inadequate; or

(3) Internal dose estimates based on air concentration values are demonstrated to be as or more accurate.

[58 FR 65485, Dec. 14, 1993, as amended at 63 FR 59682, Nov. 4, 1998]

Subpart D [Reserved]

Subpart E—Monitoring of Individuals and Areas

§ 835.401 General requirements.

(a) Monitoring of individuals and areas shall be performed to:

(1) Demonstrate compliance with the regulations in this part;

(2) Document radiological conditions;

(3) Detect changes in radiological conditions;

(4) Detect the gradual buildup of radioactive material;

(5) Verify the effectiveness of engineering and process controls in containing radioactive material and reducing radiation exposure; and

(6) Identify and control potential sources of individual exposure to radiation and/or radioactive material.

(b) Instruments and equipment used for monitoring shall be:

(1) Periodically maintained and calibrated on an established frequency;

(2) Appropriate for the type(s), levels, and energies of the radiation(s) encountered;

(3) Appropriate for existing environmental conditions; and

(4) Routinely tested for operability.

[58 FR 65485, Dec. 14, 1993, as amended at 63 FR 59682, Nov. 4, 1998]

§ 835.402 Individual monitoring.

(a) For the purpose of monitoring individual exposures to external radiation, personnel dosimeters shall be provided to and used by:

(1) Radiological workers who, under typical conditions, are likely to receive one or more of the following:

(i) An effective dose equivalent to the whole body of 0.1 rem (0.001 sievert) or more in a year;